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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/542,643

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Toshinori Takatsuka

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EXAMINER

HAILEMARIAM, EMMANUEL

ART UNIT

PAPER NUMBER

2629

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/542,643

Applicant(s)

TAKATSUKA, TOSHINORI

Examiner

Emmanuel Hailemariam

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-49 is/are pending in the application.
- 4a) Of the above claim(s) 22,27-32,36,39-42,45 and 48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19,21,23-26,33-35,37,43,44,46,47 and 49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claim 19-21,23-26,33-35,37,38,43,44,46,47 and 49** are rejected under 35 U.S.C. 103(a) as being unpatentable over Maattaet (Patent No. US 6762748) in view of Arita et al (Patent No. US 5,504,502).

As to claim 19, Maattaet discloses, a pointing device comprising: a ring-like magnet that is movably supported in parallel to a plane, ***and is internally and externally magnetized in the direction of its radius of said ring-like magnet (see.fig.3a, and fig. 3b)***; and a plurality of magnetic sensors for detecting magnetic flux density produced by said ring-like magnet in a direction parallel to the plane are ***placed outside or inside said ring-like magnet***, wherein said ***magnetic sensors are disposed symmetrically from each other to said ring-like magnet (fig.3a(323, 321))***, said magnetic sensors in the direction parallel to the plane, the variations being caused by movement ***in a direction parallel to the plane*** of said ring-like magnet (***fig.3a***). But, does not expressly disclose variations in the magnetic flux density.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to be motivated to incorporate the magnetic sensors capable of

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detecting the variations in the magnetic flux density as taught by Arita into the input device of Maattaet, because the magnetic sensor helps detect the variations in the magnetic flux density i.e., helps indicate as to where the magnetic flux strength is concentrated, and Arita suggests such a feature would be useful in an input device as taught by Maattaet (see col. 5, lines 54-65).

As to claim 20, Arita discloses a pointing device comprising: ring-like magnet is internally and externally unipolarly magnetized (see fig.9A, col.6 lines 5-20).

As to claim 21, Arita discloses the pointing device as claimed in claim 19, further comprising a printed circuit board on which a resin layer *with elastic deformation* is provided, wherein said ring-like magnet is fixed to said resin layer, and *said ring-like magnet is movably supported in parallel to said printed circuit board*, magnetic sensors are placed on said printed circuit board (fig.1 (14), col.4 lines 47-50).

As to claim 23, Arita discloses the pointing device as claimed in claim 19, wherein said magnetic sensors are magnetic sensors utilizing Hall effect, and the output signals are proportional to the magnetic flux density (fig.9A (18), col.6 lines 15-20; it is apparent that the magnet consists of this hall effect phenomenon, since a Hall effect refers to the potential difference (Hall voltage) on the opposite sides of an electrical conductor through which an electric current is flowing, created by a magnetic field applied perpendicular to the current; which is a magnetic characteristic as applied in the indicated figure).

As to claim 24, Arita discloses the pointing device as claimed in claim 19, wherein said magnetic sensors are magnetic sensors utilizing magneto-resistive effect (fig.11;

the application of magnet reduces the resistance of the material to the applied force, and the circuit may be able to use as a sensor).

As to claim 25, Arita discloses the pointing device as claimed in claim 19, further comprising an origin returning means for returning said ring-like magnet to the origin using magnetic force generated by said ring-like magnet (fig.28 (61), col.10 lines 25-33).

As to claim 26, Arita discloses the pointing device as claimed in claim 19, wherein said ring-like magnet *is magnetized in the direction of its radius and magnetized in a multipolar manner in the direction of its circumference*, and said magnetic sensors are **disposed and faced** to a magnetic pole center of said ring-like magnet magnetized in a multipolar manner (fig.8A (14,18) fig. 9A (14), col. 6 lines10-20).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the magnetic sensor of Arita in Ito et al system because it would allow us to determine the magnetic directions.

As to claim 33, Arita discloses the pointing device as claimed in claim 21, wherein said resin layer and said printed circuit board have their opposing faces not bonded to each other (fig. 9A (18)), col.7 lines 36-38).

As to claim 34, Arita discloses the pointing device as claimed in claim 21, wherein said resin layer is an elastic sheet (fig.1 (11), col.4 lines 51-53).

As to claim 35, Arita discloses the pointing device as claimed in claim 21, wherein said resin layer is a silicone resin (col. 4, lines 51-55; since resin layer is characterized by being elastic sheet, it is very useful in pressure sensitive adhesives, silicone rubbers, coatings and additives)

As to claim 37, Arita discloses the pointing device as claimed in claim 21, further comprising a switch on the resin layer side of said printed circuit board and at about the center of said ring-like magnet (fig.19 (15), col.8 lines 38-43)

As to claim 38, Arita discloses the pointing device as claimed in claim 37, further comprising a projection for depressing said switch at a portion facing said switch on said resin layer (fig.20A, col.8 lines 64-68).

As to claim 43, Arita discloses the pointing device as claimed in claim 23, wherein said magnetic sensors utilizing the Hall effect are disposed on the resin layer side of said printed circuit board to detect the magnetic flux density in a direction parallel to the surface of said printed circuit board (fig.29, (14-1, 14-2). Fig.10 (17)).

As to claim 44, Arita discloses the pointing device as claimed in claim 23, wherein said magnetic sensors utilizing the Hall effect are magnetic sensors with a single output terminal.

As to claim 46, Arita discloses the pointing device as claimed in claim 24, wherein said magnetic sensors utilizing the magneto-resistive effect are semiconductor magneto-resistive elements which are disposed on the resin layer side of said printed circuit board to detect the magnetic flux density in a direction parallel to the surface of said printed circuit board ((fig.29, (14-1, 14-2). fig.30 Fig.10 (17)).

As to claim 47, Arita discloses the pointing device as claimed in claim 24, wherein said magnetic sensors utilizing the magneto-resistive effect are four semiconductor magneto-resistive elements disposed symmetrically on X and Y axes, which are two axes on a two dimensional plane of an orthogonal system, wherein two

magnetic sensors on the X axis are electrically connected at a first connection point; and two magnetic sensors on the Y axis are electrically connected at a second connection point, and wherein said pointing device detects variations in ambient magnetic flux density caused by movement of said ring-like magnet using electric signals at the first and second connection points (fig.8A, fig.8B) col.5 lines 40-50).

As to claim 49, Arita discloses an electronic device incorporating the pointing device as defined in any one of claims (see fig. 1).

Response to Arguments

Applicant's arguments with respect to claims 19-49 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Hailemariam whose telephone number is 571-270-1545. The examiner can normally be reached on M-F 8:00am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on 571-2727674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

E.H

05/23/07


AMARE MENGISTU
SUPERVISORY PATENT EXAMINER